

Service Manual

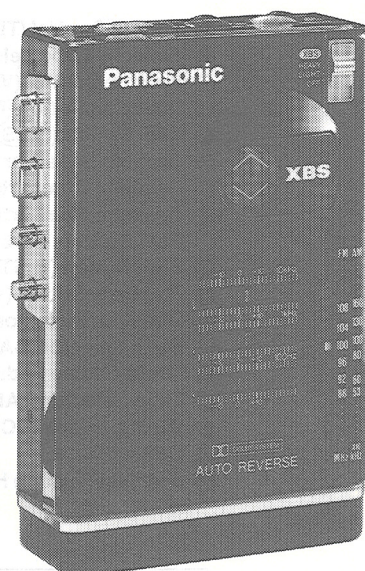
Radio Cassette

Stereo Radio Cassette Player

RX-SA79

Color

(K) Black Type



Area

color	area
(K)	[Z] For All European areas except United Kingdom.
(K)	[ZE] For United Kingdom.

RX-SA79 Mechanism Series

■ SPECIFICATIONS

General:

Power Requirement: Battery; 1.5V(One UM-3,"AA" Size Penlight Battery) (Panasonic UM-3 or equivalent)
 Power Output: 7mW(3.5mWx2) ... RMS(max.)
 Input: DC IN; 1.5V(mini jack)
 Output: Headphones; 35Ω ø3.5
 Dimensions: 85.5x122.5x32mm
 Weight: 227g without batteries

Radio Section:

Radio Frequency Range: FM; 87.5~108MHz
 AM; 520~1610kHz
 Intermediate Frequency: FM; 10.7MHz
 AM; 455kHz...[Z] 470kHz...[ZE]
 Sensitivity: FM; 3μV/0.04mW output (-3dB Limit Sens)
 AM; 100μV/m/0.04mW output

Tape Deck Section:

Frequency Response: Normal; 20~15,000Hz
 CrO2; 20~15,000Hz
 Metal; 20~15,000Hz

Motor:

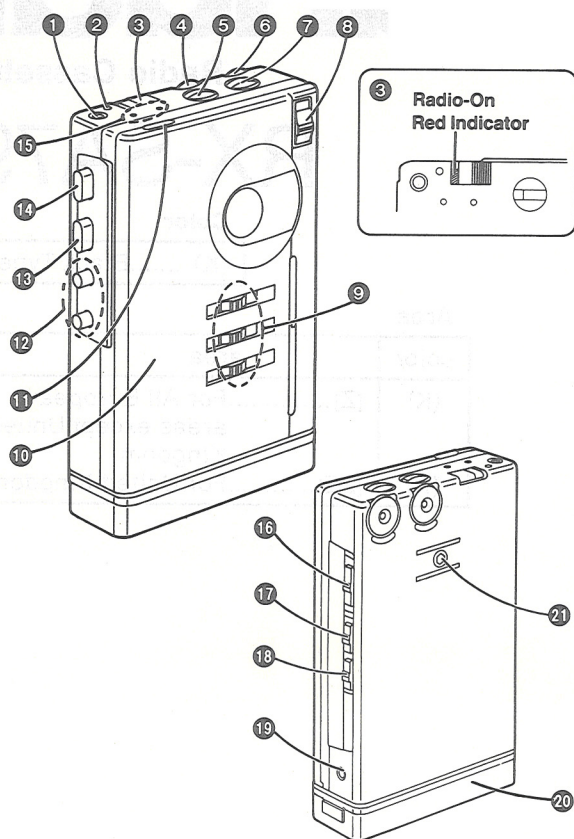
Track System: Electrical governor motor
 4-track 2-channel stereo playback
 Tape Speed: 1-7/8ips(4.8cm/s)

Weights and dimensions shown are approximate.
 Design and specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
 P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROLS



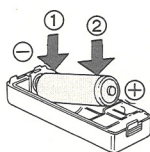
- ① Headphones Jack () [35Ω/φ3.5]
- ② Tape/Battery Check Indicator (TAPE/BATT)
The Tape/Battery Check Indicator will light during tape operation only.
- ③ Function Selector (SELECTOR)
The Radio-On Red Indicator will appear during radio operation.
- ④ Tuning Control (TUNING)
- ⑤ Reverse Mode Selector (REV. MODE)
- ⑥ Volume Control (VOL)
- ⑦ Direction Button (DIRECTION)
- ⑧ XBS Switch (XBS)
- ⑨ Graphic Equalizer Controls
- ⑩ Cassette Compartment
- ⑪ Cassette Compartment Cover Open Button (OPEN)
- ⑫ Fast Buttons (◀◀ FAST ▶▶)
- ⑬ Stop Button (■ STOP)
- ⑭ Playback Button (◀▶ PLAY)
- ⑮ Direction Indicators (FWD • REV)
- ⑯ Band Selector (BAND)
- ⑰ *Dolby Noise Reduction Switch (DOLBY NR)
- ⑱ Tape Selector (TAPE)
- ⑲ DC Input Jack (DC IN 1.5 V ⊖ ⊕ ⊕ ⊕)
- ⑳ Battery Case
- ㉑ Belt Clip Fixation Hole

"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.

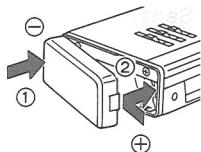
POWER SOURCE

Battery Operation

1. Insert a "AA" size (Panasonic UM-3 or equivalent, not included) battery into the Battery Case (included), making sure that the proper polarity is maintained.



2. Attach the Battery Case to the unit, making sure that the proper polarity is maintained.



Battery life

When the battery becomes weak, the tape speed will slow down, the sound will become distorted, and the volume will decrease.

To check the condition of the battery;

1. Press the Playback Button.
2. When the Tape/Battery Check Indicator goes out or dims, it is time to replace the battery with new one.

☀
TAPE/BATT



NORMAL



OK

●
TAPE/BATT



REPLACE

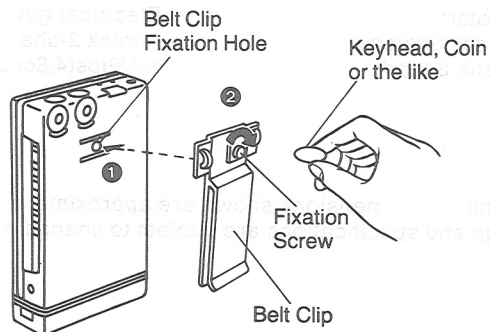


NO

To Prevent Possible Damage to this Unit

- Load new battery with its polarity (⊕ and ⊖) aligned correctly.
- Do not apply heat to battery or internal short-circuit may occur.
- If this unit is not to be used for a long period of time, or used on AC mains supply, remove the battery and store it in a cool and dry place.
- Remove spent battery immediately and dispose of it.

BELT CLIP



■ DISASSEMBLY INSTRUCTIONS

Disassemble and assemble the unit with care since a flexible printed circuit board is used.

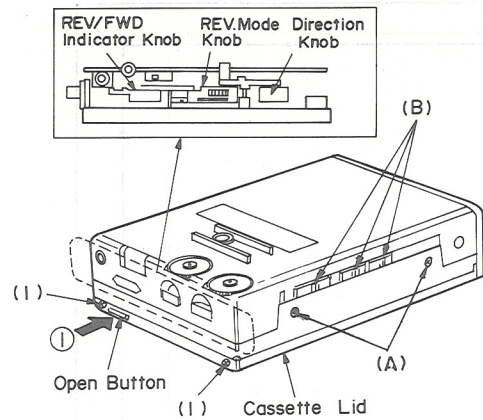


Fig. 1

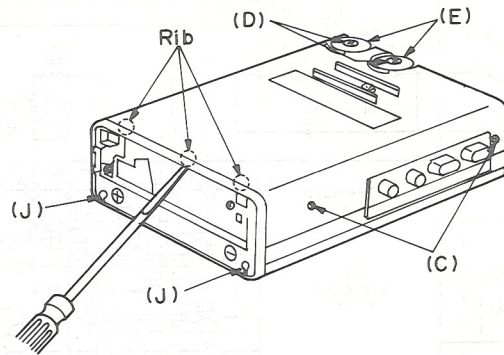


Fig. 2

■ Remove the Rear Cabinet

1. Remove the screw (A) (1.4×3.5)mm×2. (Fig. 1)
2. Remove the knob (B)×3 with ⊖ screwdriver. (Fig. 1)

3. Remove the screw (C) (1.4×2.5)mm×2. (Fig. 2)
4. Remove the screw (D) (1.4×4.5)mm×2. (Fig. 2)
5. Remove the knob (E)×2. (Fig. 2)
6. Remove the rib with ⊖ screwdriver. (Fig. 2)

Note: When detaching the rear cabinet, be careful not to lose the REV/FWD indicator, REV. Mode and Direction knobs since they also detach at the same time. (Refer to Fig. 1)

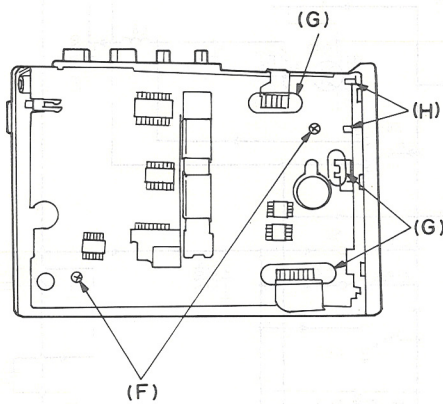


Fig. 3

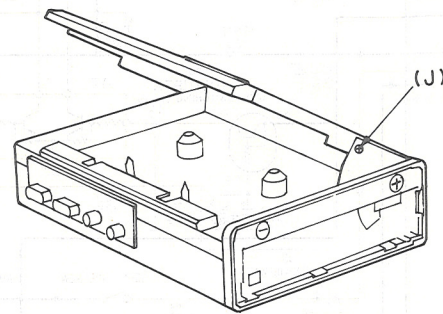


Fig. 4

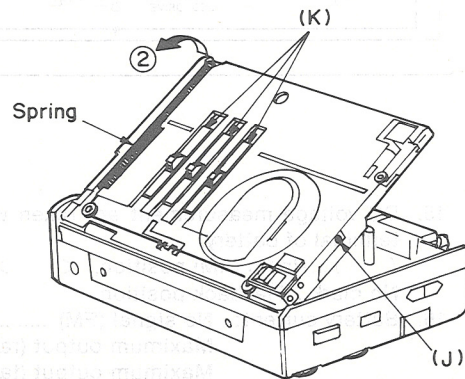


Fig. 5

■ Remove the Main Circuit Board

1. Remove the screw (F) (1.4×2.5)mm×2. (Fig. 3)
2. Remove the solder (G) from flexible PC board. (Fig. 3)
3. Remove the solder point (H)×2. (Fig. 3)

■ Remove the Cassette Lid

1. Remove the screw (I) (1.4×2.5)mm×2. (Fig. 1)

■ Remove the Cassette Holder & Graphic Equalizer PC board.

1. Push the open button in the direction of the arrow ①. (Fig. 1)
2. Remove the screw (J) (1.4×2.5)mm×4. (Fig. 2・4 and 5)
3. Remove the spring in the direction of the arrow ②. (Fig. 5)
4. Remove the knob (K)×3. (Fig. 5)
5. Remove the screw (L) (1.4×2.5)mm×5. (Fig. 6)
6. Remove the solder (M) from flexible PC board. (Fig. 6)

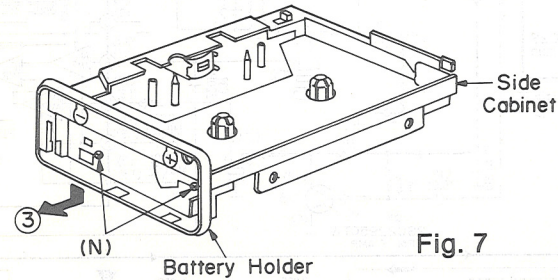


Fig. 7

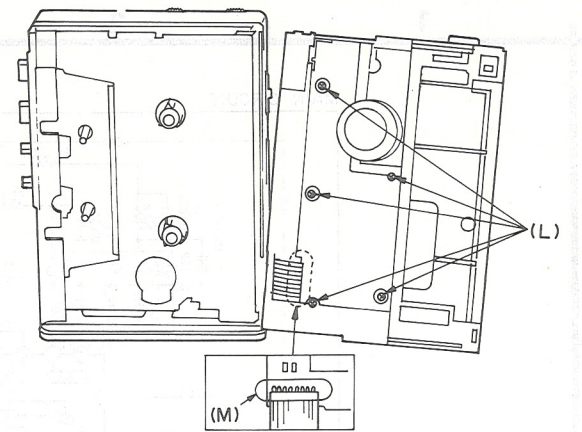


Fig. 6

■ Remove the Battery Holder

1. Remove the screw (N) (1.4×2.5)mm×2. (Fig. 7)
2. Remove the Battery Holder in the direction of the arrow ③. (Fig. 7)

■ DIAL THREADING AND DIAL SETTING POINT

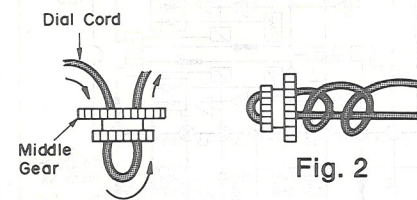


Fig. 1

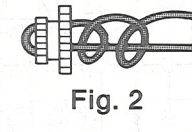


Fig. 2

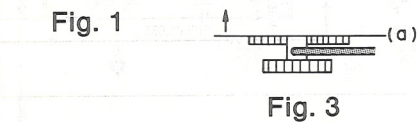


Fig. 3

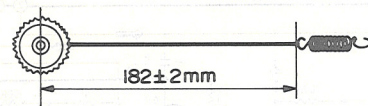


Fig. 4

■ Dial Threading

1. Tie one end of the dial cord to the middle gear, and tie the other end of the cord to the spring (see Figs. 1, 2, and 4).
 2. Adjust the length of the dial cord to 182±2mm from the center of the middle gear to the knot on the spring (see Fig. 4).
- Note:** When tying the dial cord to the middle gear, cut the knot so that it does not protrude from the line "a" in Fig. 3.
3. Thread the dial cord following the numbered sequence shown in Figs. 5 and 6.

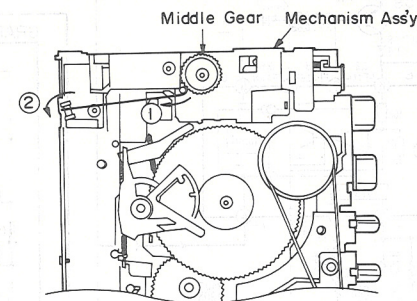


Fig. 5

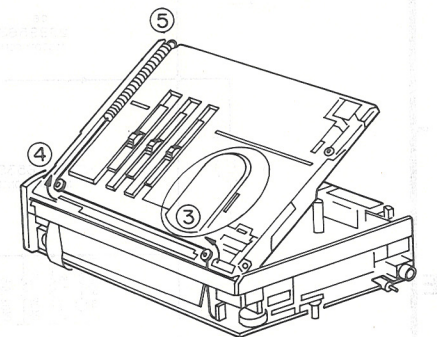


Fig. 6

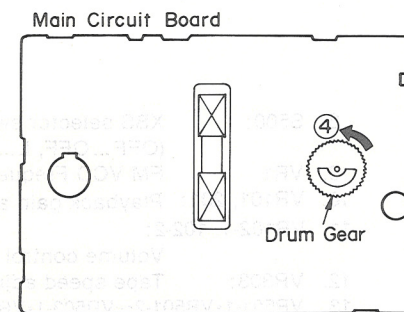


Fig. 7

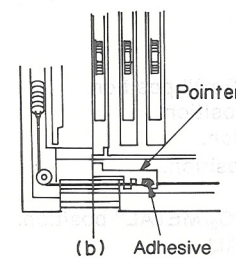
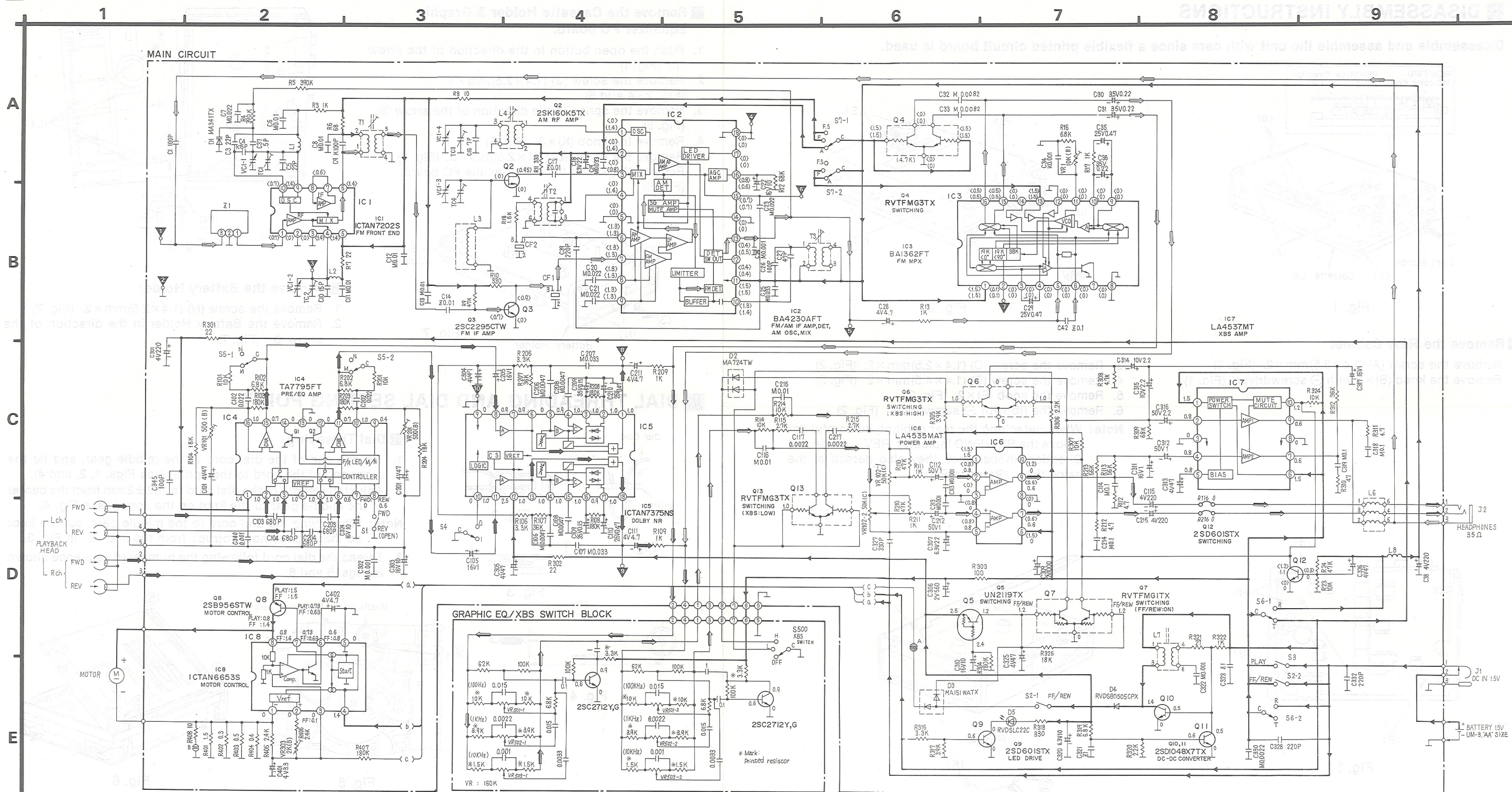


Fig. 8

■ Dial Setting Point

1. Turn the drum gear fully in the direction of the arrow ④ (see Fig. 7).
2. Mount the main circuit board on the mechanism assembly.
3. With the pointer aligned with line (b), set it on the dial cord (see Fig. 8).

SCHEMATIC DIAGRAM

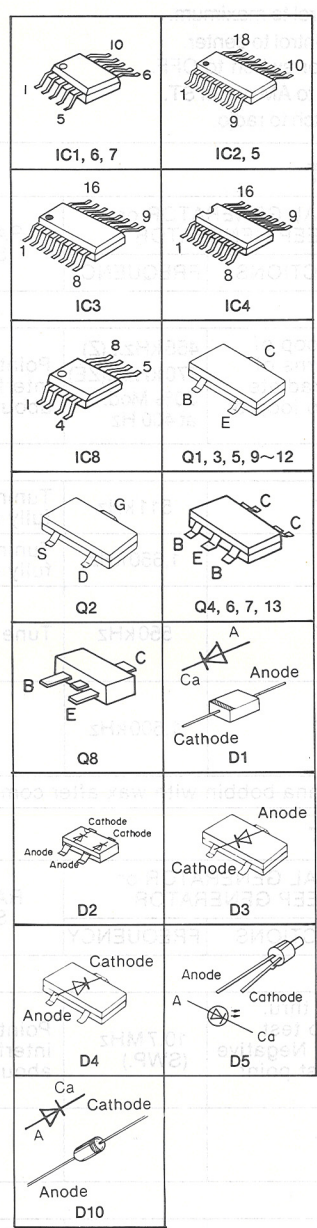
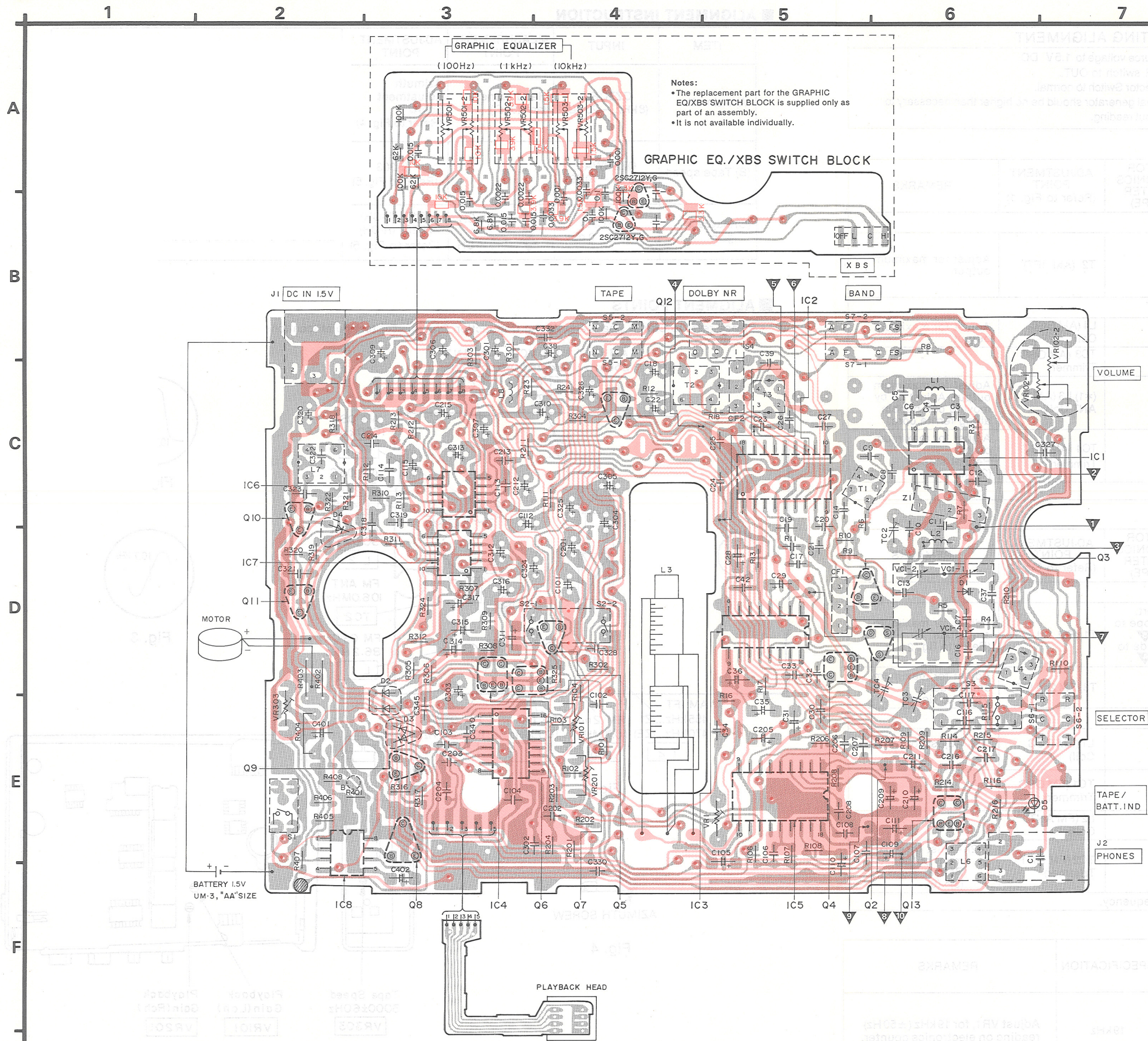


Notes:

- S1: FWD/REV switch in "OFF (Rev)" position.
- S2-1, S2-2: FF/REW switch in "OFF" position.
- S3: Play switch in "OFF" position.
- S4-1, S4-2: Dolby NR switch in "DX" position. (I...IN, O...OUT)
- S5-1, S5-2: Tape selector switch in "CrO₂/METAL" position. (N...Normal, M...CrO₂/METAL)
- S6-1, S6-2: Function selector switch in "TAPE" position. (T...Tape, R...Radio)
- S7-1, S7-2: Band selector switch in "AM" position. (A...AM, F...FM, F.S...FM ST)
- S500: XBS selector switch in "OFF" position. (OFF...OFF, L...Light, H...HEAVY)
- VR1: FM VCO Frequency adjustment VR.
- VR101, 201: Playback gain adjustment VR.
- VR102-1, 102-2: Volume control VR.
- VR303: Tape speed adjustment VR.
- VR501-1~VR501-2~VR503-1~VR503-2: Graphic equalizer VR.
- The mark (▼) shows test point e.g. ▼=test point 1.
- DC voltage measurement are taken with electronics voltmeter from negative terminal of battery. () ... Radio (AM) position, < > ... Radio (FM) position. No mark...Playback position.
- Battery current: No signal (FM) 23.1mA (FM), 19.9mA (AM)
Maximum output (radio) 26.9mA (FM), 22.0mA (AM)
Maximum output (tape) 140.8mA (VR max)
Maximum output (tape) 130.7mA (VR min)

• This schematic diagram may be modified at any time with the development of new technology.

CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



- Notes:
1. The symbols (●) shown in the circuit board indicate printed resistor.
 2. The circuit shown in (●) on the conductor indicates printed circuit on the back side of the printed circuit board.
 3. The circuit shown in (●) on the conductor indicates printed circuit on the front side of the printed circuit board.
 4. The symbols (●) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.
- This circuit board diagram may be modified at any time with the development of new technology.

MEASUREMENTS AND ADJUSTMENTS

ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

- Set volume control to maximum.
- Set equalizer control to center.
- Set XBS selector switch to OFF.
- Set band switch to AM or FM ST.
- Set selector switch to radio.
- Set power source voltage to 1.5V DC.
- Set Dolby NR switch to OUT.
- Set Tape Selector Switch to normal.
- Output of signal generator should be no higher than necessary to obtain an output reading.

AM ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLT METER or SCOPE)	ADJUSTMENT POINT (Refer to Fig. 1)	REMARKS
	CONNECTIONS	FREQUENCY				
AM-IF ALIGNMENT						
(1) AM	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455kHz...(Z) 470kHz...(ZE) 30% Mod. at 400 Hz	Point of non-interference. (on/ about 600kHz)	Headphone Jack (35Ω)	T2 (AM IFT)	Adjust for maximum output.
AM-RF ALIGNMENT						
(2) AM	"	511kHz	Tuning capacitor fully closed.	"	L4 (AM OSC Coil)	Adjust for maximum output.
(3) AM	"	1,650kHz	Tuning capacitor fully open.	"	TC3 (AM OSC Trimmer)	"
(4) AM	"	550kHz	Tune to signal.	"	(*1) L3 (AM ANT Coil)	Adjust for maximum output. Adjust L3 by moving coil bobbin along ferrite core.
(5) AM	"	1,500kHz	"	"	TC4 (AM ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
(* 1) Cement antenna bobbin with wax after completing alignment.						

(*1) Cement antenna bobbin with wax after completing alignment.

FM ALIGNMENT

BAND	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONICS VOLT METER or SCOPE)	ADJUSTMENT POINT (Refer to Fig. 1)	REMARKS	
	CONNECTIONS	FREQUENCY					
FM-IF ALIGNMENT							
(1)	FM	High side thru. 0.001 μ F to test point ∇ ₃ . Negative side to test point ∇ ₂ .	10.7 MHz (SWP.)	Point of non-interference. (on/ about 90 MHz)	Connect vert. amp. of scope to test point ∇ ₅ . Negative side to test point ∇ ₄ .	T1 (FM 1st IFT)	Adjust for maximum amplitude. (Refer to fig. 2.)
(2)	FM	"	"	"	"	T3 (FM 2nd IFT)	Adjust for maximum amplitude. (Refer to fig. 3.)
FM-RF ALIGNMENT							
(3)	FM	Connect to test point ∇ through FM dummy antenna. Negative side to test point ∇ ₂ .	86.2 MHz	Variable capacitor fully closed.	Headphone Jack (35 Ω)	L1 (FM OSC Coil)	(*2) Adjust for maximum output.
(4)	FM		109.2 MHz	Variable capacitor fully open.	"	TC1 (FM OSC Trimmer)	"
(5)	FM		90 MHz	Tune to signal.	"	L2 (FM ANT Coil)	"
(6)	FM		106 MHz	"	"	TC2 (FM ANT Trimmer)	(*2) Adjust for maximum output. Repeat steps (3)~(6).
(*2) Three output responses will be present; proper tuning is the center frequency.							

(*2) Three output responses will be present; proper tuning is the center frequency.

SEPARATION ALIGNMENT

ITEM	FM SIGNAL GENERATOR SOURCE CONNECTION	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT POINT (Refer to Fig. 1)	SPECIFICATION	REMARKS
Adjustment of pilot signal.	98MHz, 60dB (CW) Connect to test point ▽ through FM dummy antenna. Negative side to test point ▽.	▽...(+) ▽...(-)	VR1	19kHz	Adjust VR1, for 19kHz (±50Hz) reading on electronics counter.

ALIGNMENT INSTRUCTION

ITEM	INPUT	MEASUREMENT POINT	ADJUSTMENT POINT	PROCEDURE
(A) Azimuth	QZZCFM (8kHz, -20dB)	Headphones jack (35Ω)	Azimuth adjustment screw (Refer to Fig. 4)	Adjust the azimuth adjustment screw during repeated forward and reverse playback to obtain the maximum head azimuth alignment with both channels equal. Then screw-lock the adjustment in place.
(B) Tape speed	QZZCWAT (3kHz, -10dB)	"	VR303 (Refer to Fig. 5)	Playback the central part of the tape and adjust VR303 so that the tape speed is as follows. 3000±60Hz (Forward & Reverse)
(C) Playback gain	QZZCFM (315 Hz, 0 dB)	▽...(+)-L-CH ▽...(-)-R-CH ▽...(+)-R-CH	VR101 (L-CH) VR201 (R-CH) (Refer to Fig. 5)	Playback any part of the tape and adjust VR101 and VR201 so that the playback gain is 72±8mV.

ALIGNMENT POINTS

- Please refer to Circuit Board and Wiring Connection Diagram for test point locations

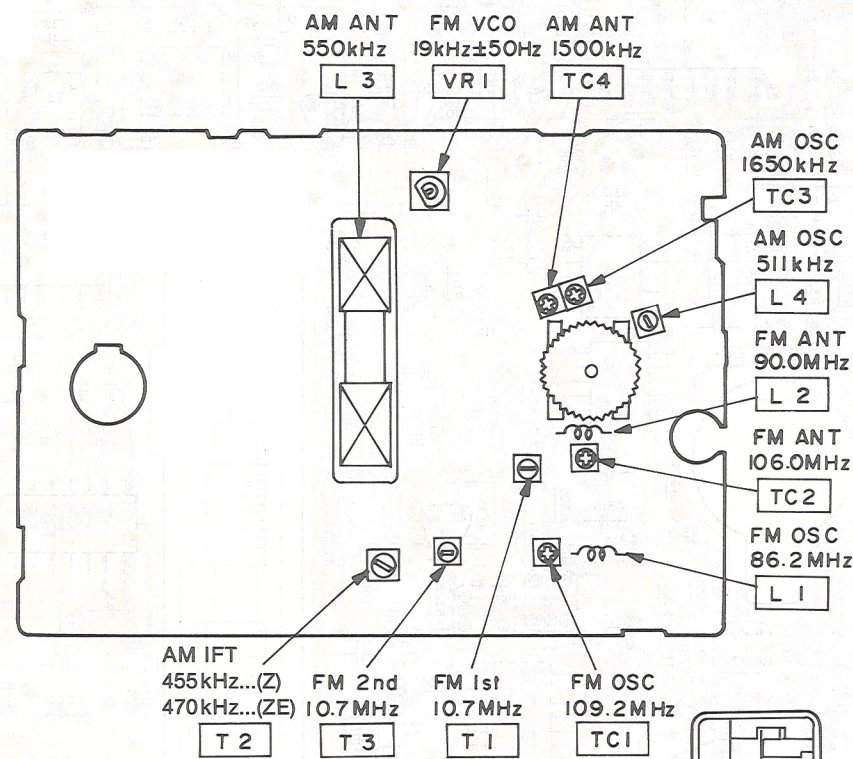


Fig. 1



Fig. 4

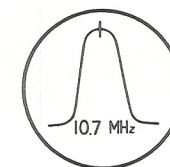
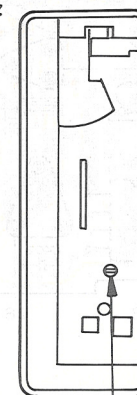


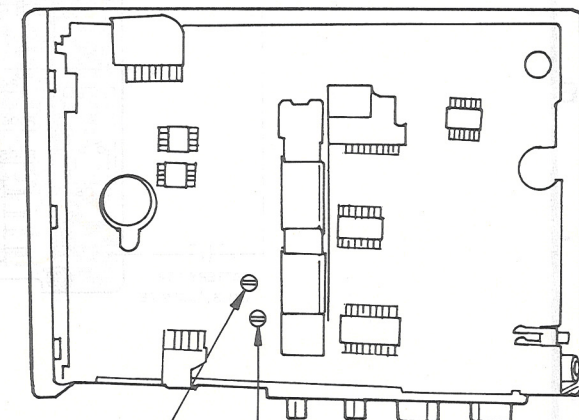
Fig. 2



Fig. 3



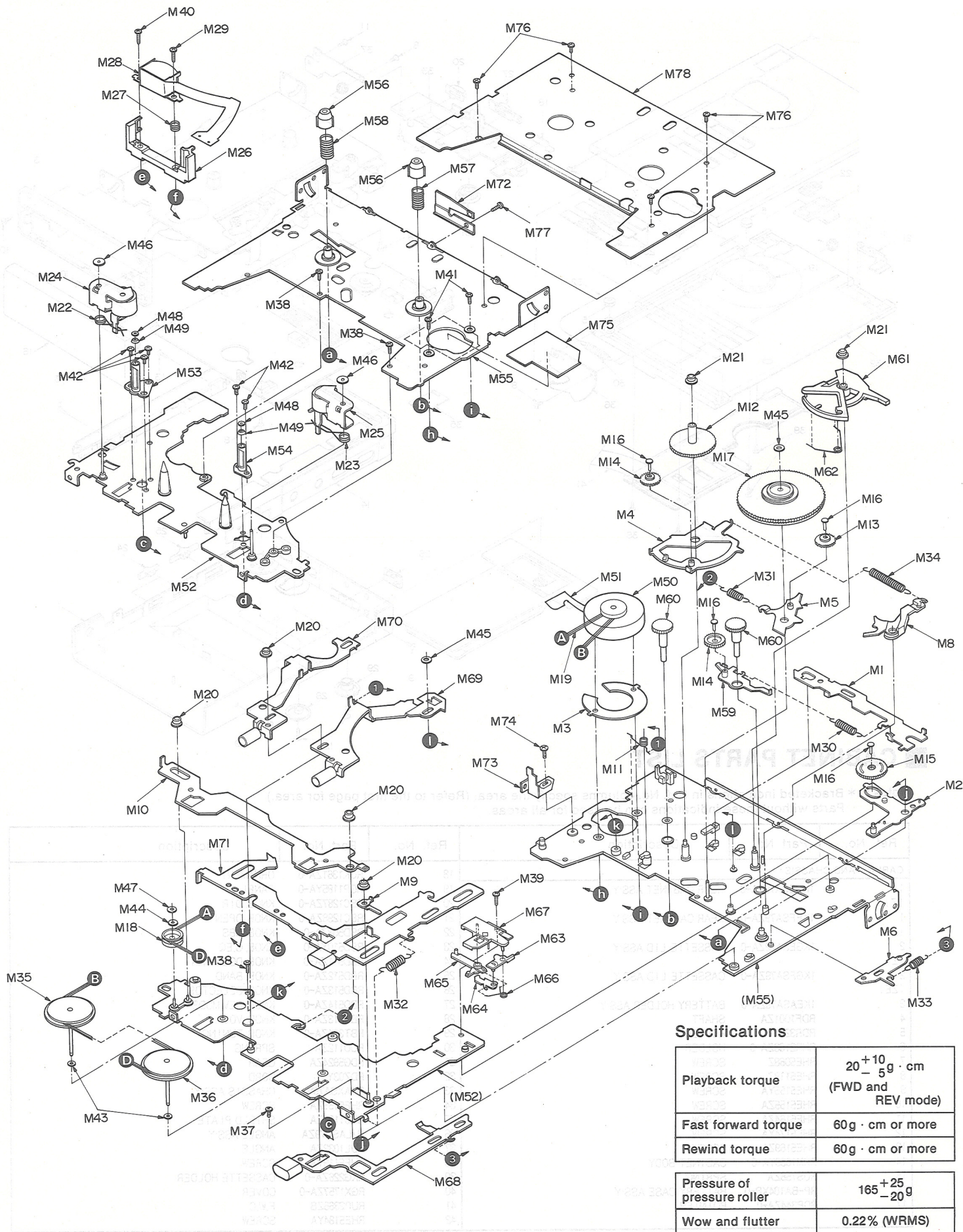
Tape Speed
3000±60Hz
VR303



Playback Gain (Lch) VR101
Playback Gain (Rch) VR201

Fig. 5

MECHANISM PARTS LOCATION



Specifications

Playback torque	20 ⁺¹⁰ ₋₅ g · cm (FWD and REV mode)
Fast forward torque	60g · cm or more
Rewind torque	60g · cm or more
Pressure of pressure roller	165 ⁺²⁵ ₋₂₀ g
Wow and flutter	0.22% (WRMS)

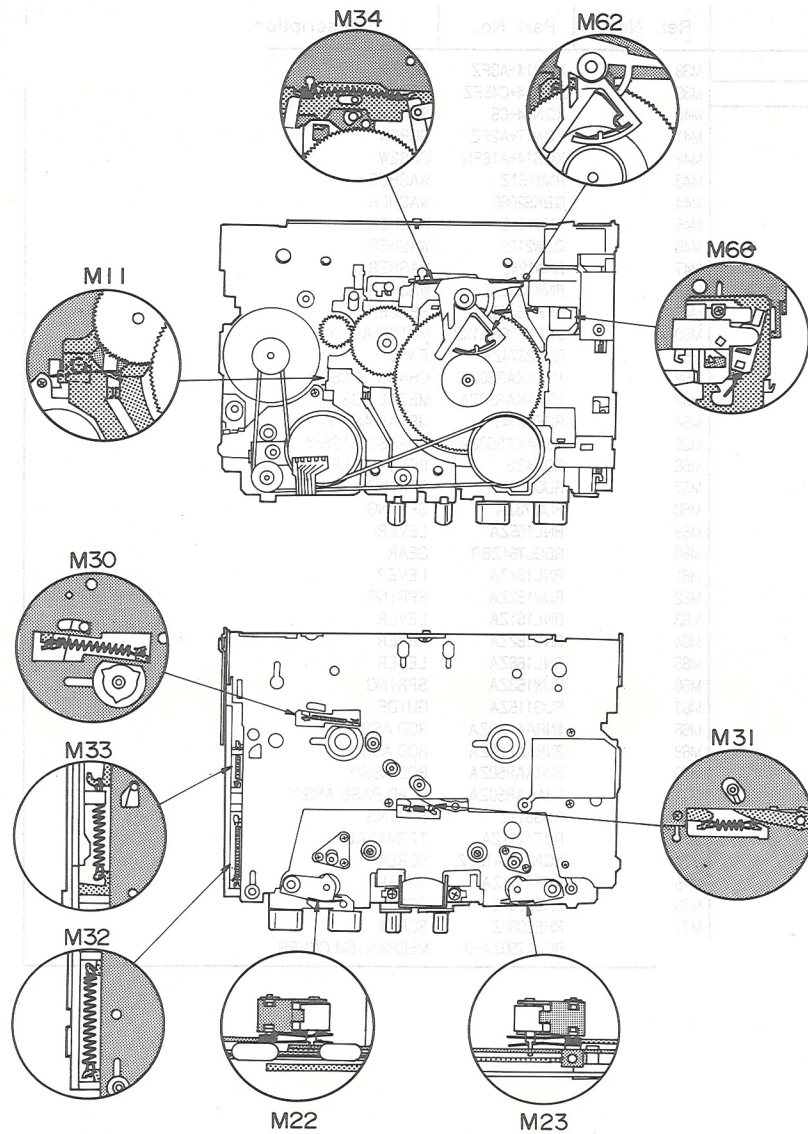
MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
MECHANISM			M38	XQN14+A3FZ	SCREW
CASSETTE DECK			M39	XQN14+C45FZ	SCREW
M1	RNR69ZA	ROD	M40	XQN14+C5	SCREW
M2	RNL157ZA	LEVER	M41	XQN17+A2FZ	SCREW
M3	RMC1164ZA	SHIELD PALTE	M42	XQS14+A16FN	SCREW
M4	RNL151ZA	LEVER	M43	RNW151Z	WASHER
M5	RNL153ZA	LEVER	M44	QBK92060	WASHER
M6	RNL159ZA	LEVER	M45	RNW131Z	WASHER
M8	RNL165ZA	LEVER	M46	QBW2129	WASHER
M9	RNL160ZA	LEVER	M47	RNW124Z	WASHER
M10	RNR66ZA	ROD	M48	RNW103ZA	WASHER
M11	RUW151ZA	SPRING	M49	RHRK540ZA	SPACER
M12	RDG5761Y	GEAR	M50	MKFN-26NA1KX	MOTOR ASS'Y
M13	RNG109ZA	GEAR	M51	RUP2374ZA	F.W.C
M14	RNG110ZA	GEAR	M52	1UAAKAR50ZA	CHASSIS ASS'Y
M15	RNG113ZA	GEAR	M53	1DFAKAR50ZA	METAL ASS'Y
M16	RHRK537ZA	PIN	M54	RDF9004Y	METAL ASS'Y
M17	1NGAKAR50ZA	GEAR ASS'Y	M55	3UAAKAR50ZA	CHASSIS ASS'Y
M18	RDR0085ZB	PULLEY	M56	RDM42B	REEL TABLE
M19	RDV94ZA	BELT	M57	RUQ100ZA	SPRING
M20	RHR3131ZA	BUSH	M58	RUQ73ZA	SPRING
M21	RHR1282Z	BUSH	M59	RNL155ZA	LEVER
M22	RUW149ZA	SPRING	M60	RDG5764ZBR	GEAR
M23	RUW150ZA	SPRING	M61	RNL167ZA	LEVER
M24	2NLAKAR50ZA	PINCH ROLLER ASS'Y	M62	RUW152ZA	SPRING
M25	3NLAKAR50ZA	PINCH ROLLER ASS'Y	M63	RNL161ZA	LEVER
M26	RUG116ZA	GUIDE	M64	RNL162ZA	LEVER
M27	RUQ1Z	SPRING	M65	RNL166ZA	LEVER
M28	1JH0026ZAM	HEAD ASS'Y	M66	RUW153ZA	SPRING
M29	RHE5076Z	SCREW	M67	RUG115ZA	GUIDE
M30	RUD7Z	SPRING	M68	1NRAAR50ZA	ROD ASS'Y
M31	RUD108ZA	SPRING	M69	2NRAAR50ZA	ROD ASS'Y
M32	RUD109ZA	SPRING	M70	3NRAAR50ZA	ROD ASS'Y
M33	RUD110ZA	SPRING	M71	1UAAAR50ZA	HEAD BASE ASS'Y
M34	RUD111ZA	SPRING	M72	RUS617Z	SPRING
M35	2DWAKAR50ZA	FLYWHEEL ASS'Y	M73	RJT1111ZA	TERMINAL
M36	1DWAKAR50ZA	FLYWHEEL ASS'Y	M74	XQN14QA18FZ	SCREW
M37	XQS14+AF39FZ	SCREW	M75	RHR2171ZA	COVER
			M76	RHE5067Z	SCREW
			M77	RHE5080Z	SCREW
			M78	RGX1750ZA-0	MECHANISM COVER

ACCESSORY AND PACKING MATERIALS

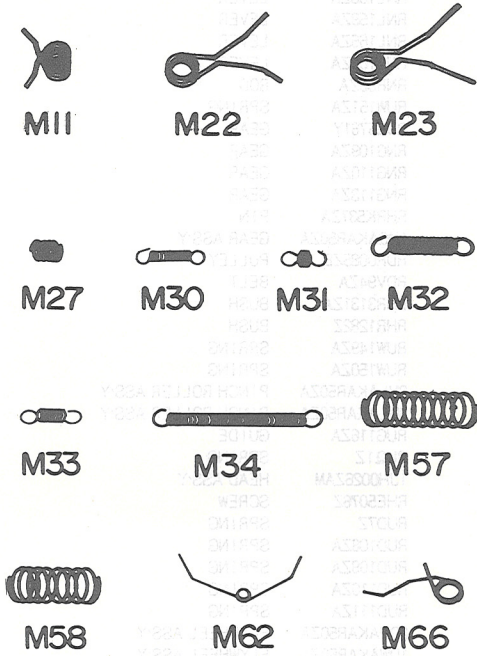
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
PACKING MATERIAL			P6	XZB10X9A04	POLYETHYLENE COVER
P1	RPH600ZA	PROTECTION BAG	P7	RPE684ZA	CUSHION
P2	RPH608ZA	SHEET	ACCESSORIES		
P3	RPN5384YA	CUSHION	A1	1QBASA79ZA-0	BELT HOLDER ASS'Y
P4	RPN5385ZA	CUSHION	A5	RP-HT100MR-0	HEADPHONE
P5	RPK2653ZA	GIFT BOX	A6	RQX5102ZA	INST. MANUAL
			P8	RPE716ZA	CUSHION

■ SPRING LOCATION

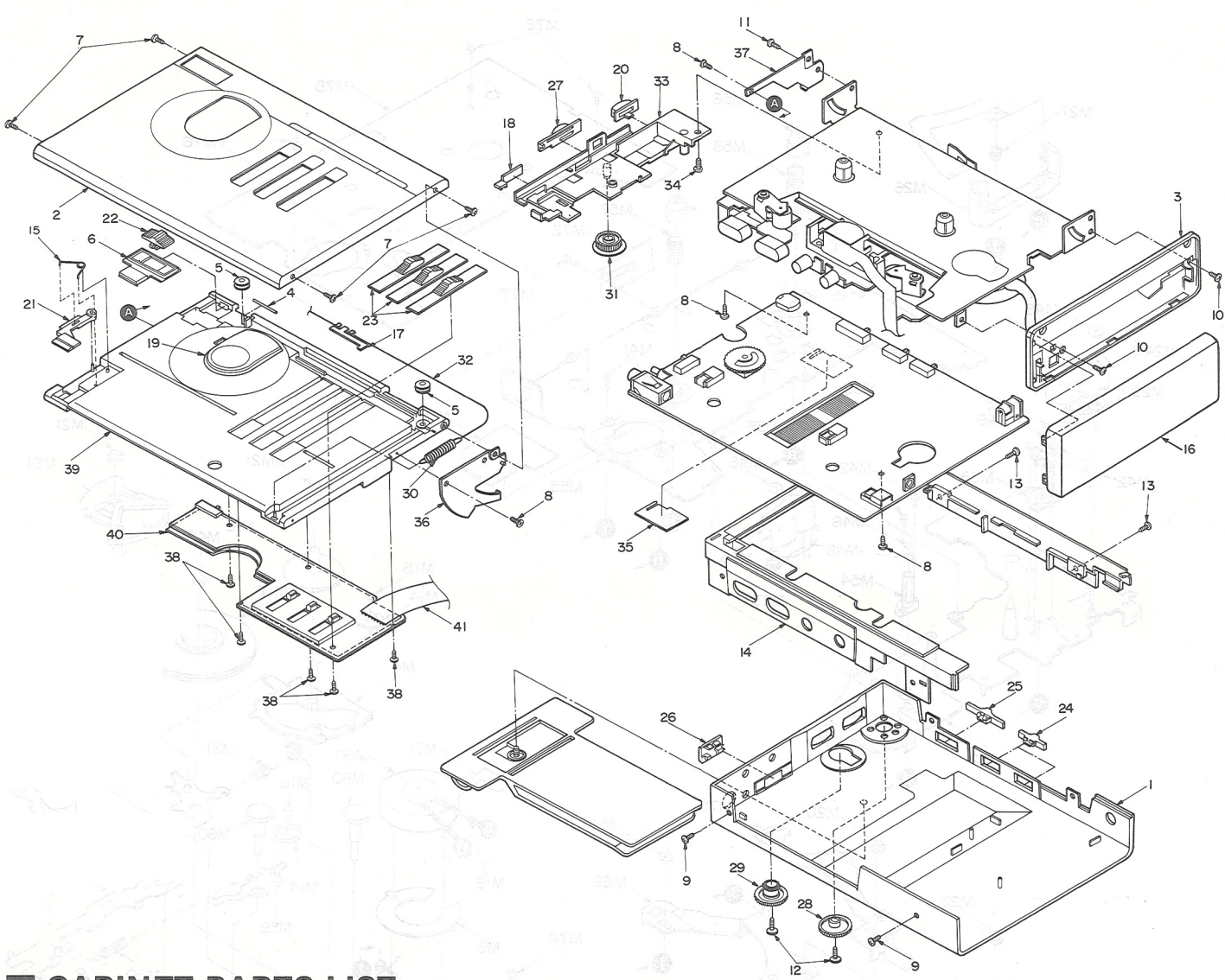


■ SPRING ILLUSTRATION

The spring illustration used shows the actual size so it can be used to check the shape of the spring.
(The illustration shows the spring separated from the mechanism.)



■ CABINET PARTS LOCATION



■ CABINET PARTS LIST

Notes : * Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
CABINET AND CHASSIS			18	RGK1361ZA-0	ORNAMENT
1	1KFESA79ZA-0	REAR CABINET ASS'Y	19	RGP1185YA-0	PANEL
[Z]			20	RBC1287ZA-0	KNOB, DIR
1	1KFFSA79ZA-0	REAR CABINET ASS'Y	21	RBC1298ZA-0	KNOB, OPEN
[ZE]			22	RBD508ZA-0	KNOB, XBS
2	1KGESA79ZA-0	CASSETTE LID ASS'Y	23	RBD510YA-0	KNOB, G.EQ
[Z]			24	RBD511ZA-0	KNOB, DOLBY NR
2	1KGfSA79ZA-0	CASSETTE LID ASS'Y	25	RBD512ZA-0	KNOB, BAND
[ZE]			26	RBD513ZA-0	KNOB, SELECTOR
3	1KEASA79ZA-0	BATTERY HOLDER ASS'Y	27	RBD514ZA-0	KNOB, REV.MODE
4	RDF1001ZA	SHAFT	28	RBT313ZA-0	KNOB, VOL
5	RDR32Z	ROLLER	29	RBT314ZA-0	KNOB, TUNING
6	RHR2163ZA-0	HOLDER	30	RUD112ZA	SPRING
7	RHE5068Z	SCREW	31	RDG5924ZA	GEAR
8	RHE5119Z	SCREW	32	RDZ03Y	CORD
9	RHE5155YA	SCREW	33	RZAXSA79M	CHASSIS ASS'Y
10	RHE5155ZA	SCREW	34	RHE5155ZA	SCREW
11	RHE5164ZA	SCREW	35	RMC1191ZA	SHIELD PLATE
12	RHE5174YA	SCREW	36	1ULASA79ZA	ANGLE ASS'Y
13	RHE5169ZA	SCREW	37	RUL1032ZA	ANGLE
14	RKM1086YA-0	CABINET BODY	38	RHE5119YA	SCREW
15	RUS756ZA	SPRING	39	RKG226ZA-0	CASSETTE HOLDER
16	RP-BA104XR-0	BATTERY CASE ASS'Y	40	RGX1757ZA-0	COVER
17	RDP344ZA-0	POINTER	41	RUP2365ZB	F.W.C
			42	RHE5184YA	SCREW

RESISTOR AND CAPACITOR PARTS LIST

Notes : * Important safety notice :

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)

Parts without these indications can be used for all areas.

Numbering System of Resistor

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1K Ω)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470 Ω)

Numbering System of Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001 μ F)	Tolerance	Peculiarity
ECEA	50	M	330	
Type	Voltage (50V)	Peculiarity	Value (33 μ F)	

● Capacity are in microfarads (μ F) unless specified otherwise, P= Pico-farads (pF) F= Farads (F).

● Resistance are in ohms (Ω), unless specified otherwise, 1K = 1,000 Ω , 1M = 1,000k Ω

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W 12 : 1/2W	J : $\pm 5\%$
ERG : Metal Oxide	14 : 1/4W 25 : 1/4W	F : $\pm 1\%$
ERQ : Fuse Type Metal	1A : 1W 18 : 1/8W	G : $\pm 2\%$
ERX : Metal Film	S2 : 1/4W S1 : 1/2W	J : $\pm 5\%$
ERD L : Carbon (chip)	2F : 1/4W 50 : 1/2W	K : $\pm 10\%$
ERO K : Metal Film (chip)	2A : 2W 3A : 3W	M : $\pm 20\%$
ERC : Solid	6G : 1/10W 8G : 1/8W	
ERF : Incombustible Box-Shaped		
ERM : Wire-Wound		
RRJ : Cip Resistor		
ERJ : Cip Resistor		

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic	0J : 6.3V 1A : 10V	K : $\pm 10\%$
ECCD : Ceramic	1C : 16V 1E : 25V	M : $\pm 20\%$
ECKD : Ceramic Capacitor	1H : 50V 1V : 35V	Z : $\pm 80\%$
EQCM : Polyester	50 : 50V 05 : 50V	-20
ECQP : Polypropylene	2H : 500V 2A : 100V	J : $\pm 5\%$
ECG : Ceramic	1 : 100V 1J : 63V	G : $\pm 2\%$
ECEA N : Non Polar Electrolytic	KC : 400V AC	F : $\pm 1\%$
QCU : Ceramic (Chip Type)	KC : 125V AC	C : $\pm 0.25pF$
ECUX : Ceramic (Chip Type)	(UL)	D : $\pm 0.5pF$
ECF : Semiconductor		
EECW : Liquid electrolyte double layer capacitor		

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
RESISTORS(VALUE,WATTAGE)			R211	RRJ6GCJ102TE	1K 1/10	C7	RCUV1E223MD	0.022 25
R3	RRJ6GCJ102TE	1K 1/10	R212	RRJ6GCJ4R7TE	4.7 1/10	C8	RCUV1E103MD	0.01 25
R4	RRJ6GCJ394TE	390K 1/10	R213	RRJ6GCJ563TE	56K 1/10	C9	RCUV1H101K	100P 50
R5	RRJ6GCJ394TE	390K 1/10	R214	RRJ6GCJ103TE	10K 1/10	C10	RCUV1H150KC	15P 50
R6	RRJ6GCJ680TE	68 1/10	R215	RRJ6GCJ272TE	2.7K 1/10	C11	RCUV1E103MD	0.01 25
R7	RRJ6GCJ220TE	22 1/10	R216	RRJ6GCJ000TE	0	C12	RCUV1E103MD	0.01 25
R8	RRJ6GCJ100TE	10 1/10	R301	RRJ6GCJ220TE	22 1/10	C13	RCUV1E103MD	0.01 25
R9	RRJ6GCJ473TE	47K 1/10	R302	RRJ6GCJ220TE	22 1/10	C14	RCUV1H103ZF	0.01 50
R10	RRJ6GCJ331TE	330 1/10	R303	RRJ6GCJ101TE	100 1/10	C16	RCUV1H070DC	7P 50
R11	RRJ6GCJ331TE	330 1/10	R304	RRJ6GCJ184TE	180K 1/10	C17	RCUV1H103ZF	0.01 50
R12	RRJ6GCJ683TE	68K 1/10	R305	RRJ6GCJ392	3.9K 1/10	C18	ECEA0JK220	22 6.3
R13	RRJ6GCJ102TE	1K 1/10	R306	RRJ6GCJ222TE	2.2K 1/10	C19	ECUV1E333MD	0.033 25
R16	RRJ6GCJ682TE	6.8K 1/10	R307	RRJ6GCJ103TE	10K 1/10	C20	RCUV1E223MD	0.022 25
R17	RRJ6GCJ102TE	1K 1/10	R308	RRJ6GCJ472TE	4.7K 1/10	C21	RCUV1E223MD	0.022 25
R18	RRJ6GCJ152	1.5K 1/10	R309	RRJ6GCJ683TE	68K 1/10	C22	ECEA1CK100L	10 16
R23	RRJ6GCJ103TE	10K 1/10	R310	RRJ6GCJ4R7TE	4.7 1/10	C23	RCUV1E223MD	0.022 25
R24	RRJ6GCJ473TE	47K 1/10	R311	RRJ6GCJ4R7TE	4.7 1/10	C24	RCUV1H102MD	0.001 50
R101	RRJ6GCJ103TE	10K 1/10	R312	RRJ6GCJ363TE	36K 1/10	C25	ECUV1E333MD	0.033 25
R102	RRJ6GCJ682TE	6.8K 1/10	R316	RRJ6GCJ332TE	3.3K 1/10	C26	RCUV1H101K	100P 50
R103	RRJ6GCJ184TE	180K 1/10	R317	RRJ6GCJ392	3.9K 1/10	C27	RCUV1H470KC	47P 50
R104	RRJ6GCJ183TE	18K 1/10	R318	RRJ6GCJ331TE	330 1/10	C28	RCSE0GT475LE	4.7 4
R106	RRJ6GCJ332TE	3.3K 1/10	R319	RRJ6GCJ682TE	6.8K 1/10	C29	RCSE1ET474RE	0.47 25
R107	RRJ6GCJ363TE	36K 1/10	R320	RRJ6GCJ222TE	2.2K 1/10	C30	RCSE1VT224RE	0.22 35
R108	RRJ6GCJ184TE	180K 1/10	R321	RRJ6GCJ270TE	27 1/10	C31	RCSE1VT224RE	0.22 35
R109	RRJ6GCJ102TE	1K 1/10	R322	RRJ6GCJ102TE	1K 1/10	C32	RCUV1E822MD	0.0082 25
R110	RRJ6GCJ473TE	47K 1/10	R324	RRJ6GCJ103TE	10K 1/10	C33	RCUV1E822MD	0.0082 25
R111	RRJ6GCJ102TE	1K 1/10	R325	RRJ6GCJ183TE	18K 1/10	C34	ECUV1H102KC	0.001 50
R112	RRJ6GCJ4R7TE	4.7 1/10	R401	RRJ6GCK1R5TE	1.5 1/10	C35	RCSE1ET474RE	0.47 25
R113	RRJ6GCJ563TE	56K 1/10	R402	RRSA39JR30BH	0.3 1/4	C36	RCSE1VT224RE	0.22 35
R114	RRJ6GCJ103TE	10K 1/10	R403	RRSA39JR50BH	0.5 1/4	C37	RCUV1H050DC	5P 50
R115	RRJ6GCJ272TE	2.7K 1/10	R404	RRSA39JR40BH	0.4 1/4	C38	ECEA0GK221I	220 4
R116	RRJ6GCJ000TE	0	R405	RRJ6GCJ242TE	2.4K 1/10	C39	RCUV1H221K	220P 50
R201	RRJ6GCJ103TE	10K 1/10	R406	RRJ6GCJ242TE	2.4K 1/10	C42	RCUV1E104ZF	0.1 25
R202	RRJ6GCJ682TE	6.8K 1/10	R407	RRJ6GCJ184TE	180K 1/10	C101	ECEA0GKS470L	47 4
R203	RRJ6GCJ184TE	180K 1/10	R408	RRJ6GCJ100TE	10 1/10	C102	RCUV1E223KD	0.022 25
R204	RRJ6GCJ183TE	18K 1/10	CAPACITORS(VALUE,VOLTAGE)			C103	RCUV1H681K	680P 50
R206	RRJ6GCJ332TE	3.3K 1/10	C1	RCUV1H101K	100P 50	C104	RCUV1H681K	680P 50
R207	RRJ6GCJ363TE	36K 1/10	C3	RCUV1H220KC	22P 50	C105	RCSE1CT105RE	1 16
R208	RRJ6GCJ184TE	180K 1/10	C4	RCUV1H150KC	15P 50	C106	RCUV1H472MD	0.0047 50
R209	RRJ6GCJ102TE	1K 1/10	C5	RCUV1H220KC	22P 50	C107	ECUV1E333MD	0.033 25
R210	RRJ6GCJ473TE	47K 1/10	C6	RCUV1E103MD	0.01 25	C108	RCUV1H472MD	0.0047 50
						C109	RCSE1VT154RE	0.15 35

Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.	Ref. No.	Part No.	Value.
C110	RCSE1ET474RE	0.47 25	C212	ECEA1HKS010L	1 50	C315	RCSE1AT225RE	2.2 10
C111	RCSE0GT475LE	4.7 4	C213	RCUV1H102MD	0.001 50	C316	ECEA1HKS2R2	2.2 50
C112	ECEA1HKS010L	1 50	C214	ECUV1E104MD	0.1 25	C317	RCSE1CT105RE	1 16
C113	RCUV1H102MD	0.001 50	C215	ECEA0GK221I	220 4	C318	ECUV1E104MD	0.1 25
C114	ECUV1E104MD	0.1 25	C216	RCUV1E103MD	0.01 25	C319	ECUV1E104MD	0.1 25
C115	ECEA0GK221I	220 4	C217	RCUV1H222MD	0.0022 50	C320	ECSF0JE106B3	10 6.3
C116	RCUV1E103MD	0.01 25	C301	ECEA0GK221I	220 4	C321	ECUV1C105ZF	1 16
C117	RCUV1H222MD	0.0022 50	C302	RCUV1H102MD	0.001 50	C322	RCUV1H102MD	0.001 50
C201	ECEA0GKS470L	47 4	C303	ECEA1CKS100	10 16	C323	ECUV1C105ZF	1 16
C202	RCUV1E223KD	0.022 25	C304	ECEA0GKS470L	47 4	C324	ECEA1CKS100	10 16
C203	RCUV1H681K	680P 50	C305	ECEA0GKS470L	47 4	C325	ECEA0GKS470L	47 4
C204	RCUV1H681K	680P 50	C306	ECEA0DV561ZI	560 2	C326	ECEA0GK470	47 4
C205	RCSE1CT105RE	1 16	C307	ECEA0JK220	22 6.3	C327	ECUV1H331K	330P 50
C206	RCUV1H472MD	0.0047 50	C309	ECEA0DV102ZI	1000 2	C328	RCUV1H221K	220P 50
C207	ECUV1E333MD	0.033 25	C310	ECEA1CKS100	10 16	C330	RCUV1H102MD	0.001 50
C208	RCUV1H472MD	0.0047 50	C311	RCSE1CT105RE	1 16	C332	RCUV1H221K	220P 50
C209	RCSE1VT154RE	0.15 35	C312	ECEA1HKS010L	1 50	C340	RCUV1H102MD	0.001 50
C210	RCSE1ET474RE	0.47 25	C313	ECEA0GK470	47 4	C345	ECUV1H101K	100P 50
C211	RCSE0GT475LE	4.7 4	C314	RCSE1AT225RE	2.2 10	C401	RCSE0JT335RE	3.3 6.3
						C402	RCSE0GT475LE	4.7 4

ELECTRICAL PARTS LIST

Notes : * Important safety notice :

Components identified by Δ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

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Parts without these indications can be used for all areas.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
INTEGRATED CIRCUITS			VARIABLE CAPACITORS		
IC1	AN7202S	I.C. FM FRONT	TC1	ECRLA010A12	TRIMMER
IC2	BA4230AFT	I.C. FM/AM 1F AMP	TC2	ECRLA010A12	TRIMMER
IC3	BA1362FT	I.C. FM MPX	TC3	ECRLA010A12	TRIMMER
IC4	TA7795FT	I.C. PRE/EQ AMP	TC4	ECRLA006A12	TRIMMER
IC5	AN7375NS	I.C. DOLBY NR	VC1	RCV4PC9D4-M	V.C.
IC6	LA4535MAT	I.C. POWER AMP	COILS AND TRANSFORMERS		
IC7	LA4537MT	I.C. XBS AMP	L1	RL04Y165-0	COIL
IC8	AN6653S	I.C. MOTOR CONT	L2	RL04Y166-0	COIL
TRANSISTORS			L3	RLF2N26-0	BAR ANTENNA
Q2	2SK160K5TX	TRANSISTOR	L4	RL02A29-M	COIL
Q3	2SC2295CTW	TRANSISTOR	L6	RLQUR63K	COIL
Q4	RVTFMG3	TRANSISTOR	L7	RL09A12-M	COIL
Q5	UN2119TX	TRANSISTOR	L8	RLQZZ1011	COIL
Q6	RVTFMG3	TRANSISTOR	T1	RL14A42-M	I.F. TRANSFORMER
Q7	RVTFMG1TX	TRANSISTOR	T2	RL12A40-M	I.F. TRANSFORMER
Q8	2SB956STW	TRANSISTOR	T3	RL14A42-M	I.F. TRANSFORMER
Q9	2SD601STX	TRANSISTOR	COMPONENT COMBINATIONS		
Q10	2SD1048X7TX	TRANSISTOR	Z1	RXABPMB8C	COMPONENT COMBINATION
Q11	2SD1048X7TX	TRANSISTOR	FILTERS		
Q12	2SD601STX	TRANSISTOR	CF1	RVF107TNWMZ3	CERAMIC FILTER
Q13	RVTFMG3	TRANSISTOR	CF2	RVFPFA455A	CERAMIC FILTER
DIODES			(Z)		
D1	MA341TX	DIODE	CF2	RVFPFA468A	CERAMIC FILTER
D2	MA724TW	DIODE	(ZE)		
D3	MA151WATX	DIODE	SWITCHES		
D4	RVDSB0505CPX	DIODE	S1	RSH1A87ZA-H	SW. FWD/REV
D5	RVDSLCL22C	DIODE	S2	RSH1B21YA-M	SW. FF/REW
VARIABLE RESISTORS			S3	RSH1B21YA-M	SW. PLAY
VR1	EVNA6AA00B14	V.R. FM VCO	S4	RSS2B56XA-A	SW. DOLBY NR
VR101	EVNA6AA00B52	V.R. PLAYBACK	S5	RSS2B56XA-A	SW. TAPE
VR102	RVV2H5C54-A	V.R. VOLUME	S6	RSS2B56XA-A	SW. FUNCTION
VR201	EVNA6AA00B52	V.R. PLAYBACK	S7	RSS3B32Z	SW. BAND
VR303	EVNA6AA00B23	V.R. TAPE SPEED	S500	RSS3A19YA-L	SW. XBS
VR501	RVV8K2C25-H	V.R. G. EQ	JACKS		
VR501~503	RVV8K2C25-H	V.R. G. EQ	J1	RJJB2Z	JACK, DC IN
			J2	RJJD3S5Z	JACK, HEADPHONE